LUBRICUS

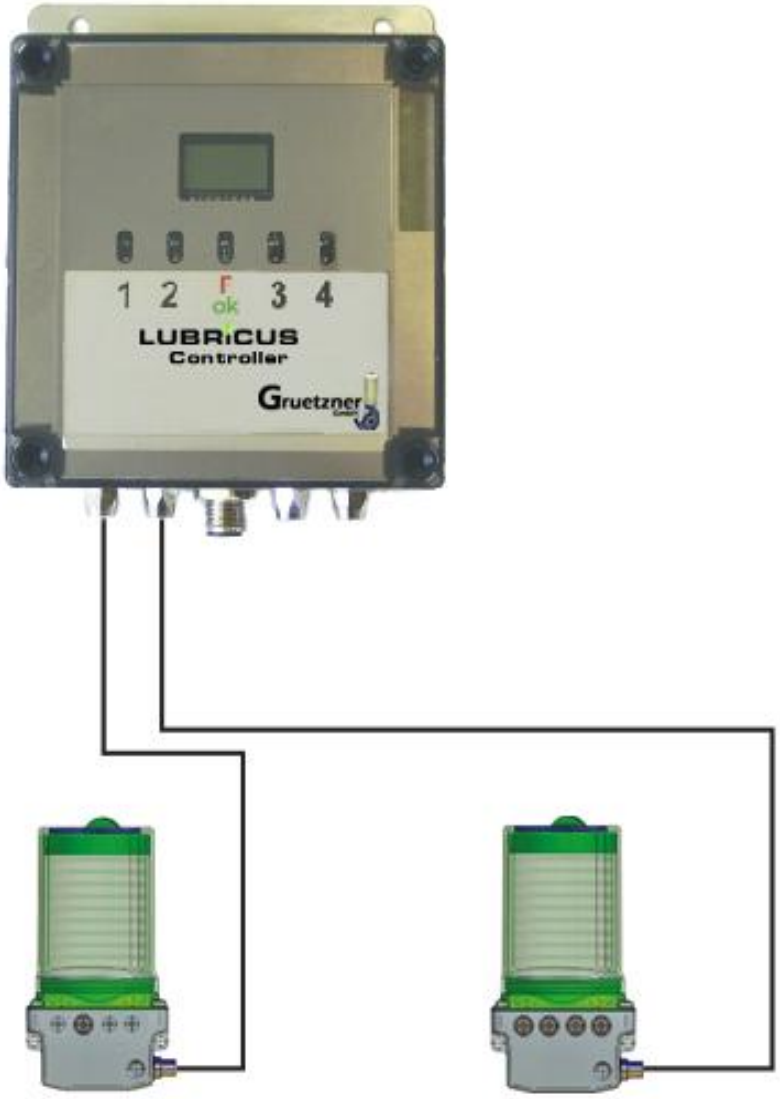
Gruetzner GmbH

User Guide

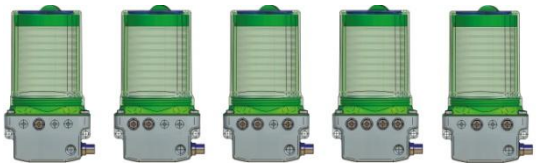
Lubricus Controller

LUB-C-1, LUB-C-2, LUB-C-3, LUB-C-4, LUB-C-1-1

(24 VDC)



Lubricus Type C



Version 06/2011

Content

General Information, Scope of supply 3

Overview: Lubricus Controller & Lubricus Lubrication System, Type C 4

General safety details 5
- Intended use 5
- Extent of warranty 5
- General safety information 5-7
- Transport and storage 7
- Installation instruction, Start up 7

Function 8
- Adjustment Flow Chart 9
- Flow chart details – Overview adjustment option 10-11
- Activation of exits, Pump specific adjustment 10-11
- Table pause time adjustments 12
- Table quantity adjustment 12

Details: Activation (Start/Stop/Adjustment) 13-16
- Functional problems: error, message and problems 16-17

Extras: Quick check function and system control 17

Communication Interface 18

Service: Lubricus, Type C with cartridge 19

Technical data: Lubricus Controller & Lubricus, Type C 20

Mounting: Lubricus Controller & Lubricus Lubrication System 21

Recommended tube/hose length & Disposal 22

General Information

Thank you very much to have decided to use our Lubricus Lubrication System and Lubricus Controller. Make sure that you familiarize yourself with the safety instructions of this unit and the accessories supplied with this unit. This manual contains important safety information.

The Lubricus Lubrication System is a very compact lubrication pump for oil and grease up to NLGI 2. The types LUB-C-1, LUB-C-2, LUB-C-3, LUB-C-4 and LUB-C-1-1 are designed for external control (Lubricus Controller) and a power supply of 24 VDC. The lubricant reservoir (400 cm³) is located in a cartridge.

- Lubricus Lubrication System (Type LUB-C-1, LUB-C-2, LUB-C-3, LUB-C-4, and LUB-C-1-1) will be installed near the lubrication point
- Lubricus Controller (System Control) will be installed in a central location

Depending on the configuration of Lubricus Lubrication System, Type C is available with up to four outlets and therefore suitable to lubricate several lubrication points.

Warning

Lubricus Lubrication System is designed for use in normal industrial environment indoor as well as outdoor but is not suitable for mounting on moving equipment for example trucks. Only use original Lubricus cartridges and original spare parts. None original spare parts can destroy the Lubricus Lubrication System or the Lubricus Controller.

Scope of supply

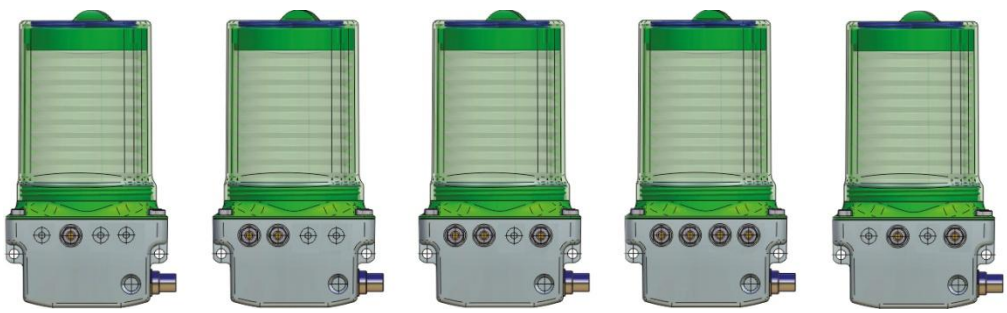
Standard delivery Lubricus Controller includes:

- Lubricus Controller
- Operating Instructions

Standard scope of supply Lubricus Lubrication System, Type C:

- Lubricus Lubrication System, (Type LUB-C-1, LUB-C-2, LUB-C-3, LUB-C-4, LUB-C-1-1)
- Tube connector attaches to the outlet, suitable for flexible tube 6 x 4
- Operating Instructions

Lubricus Lubrication System, Type C



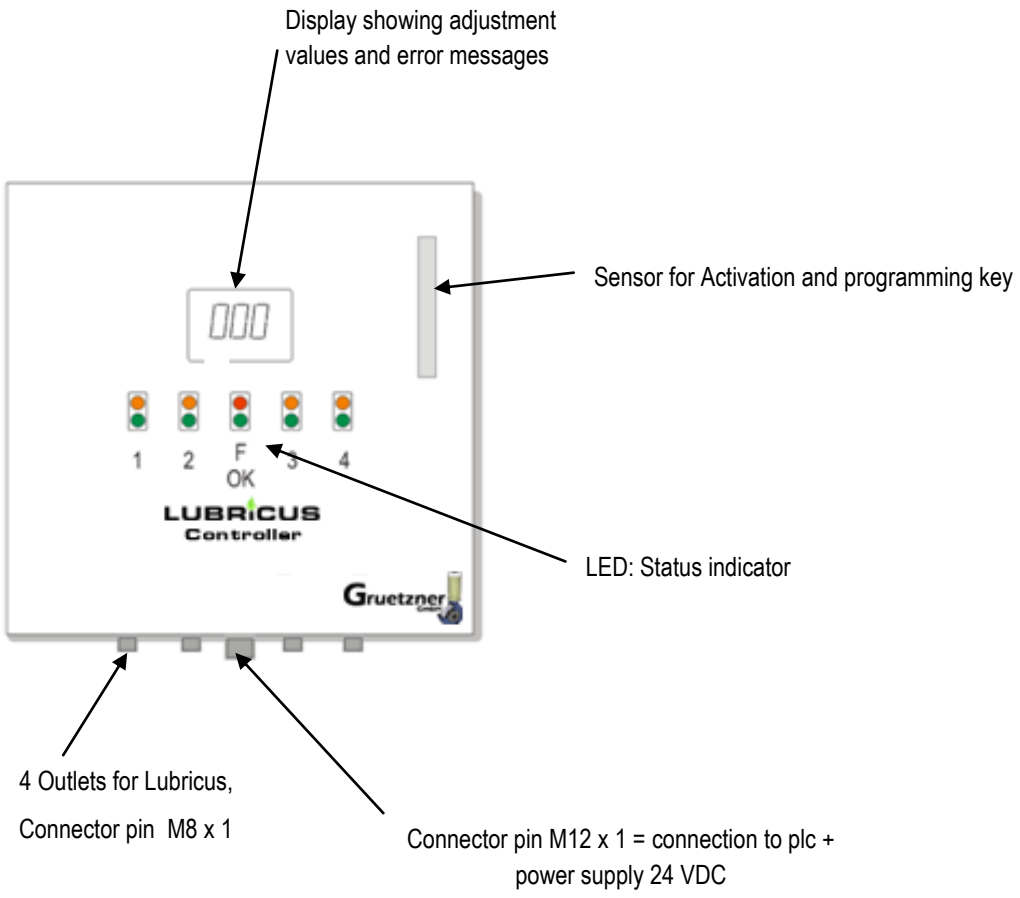
LUB-C-1 LUB-C-2 LUB-C-3 LUB-C-4 LUB-C-1-1

Lubricus Lubrication System

Ventilation Lock & programming key
(The programming key is conveniently stored on top of the clear housing, to remove the key for Setup or Adjustments of your Lubricus (Simply turn clockwise to release key)
The point of the key is used for programming.
Please note: Always replace the key for safe keeping as this also forms part of the cover.
Cover for cartridge
Connection Lubricus Controller

Important remark: unused exits cannot be closed and must remain open to avoid damage to the Lubricus Lubrication System!

Lubricus Controller



General safety details

Everybody who is involved with the installation, start-up, maintenance and operation of the Lubricus Lubrication System must read these instructions carefully!

Use in accordance with guide

Attention

Lubricus Lubrication System is **only** allowed for **industrial use**.
Lubricus Lubrication System may only be put into service, if it is integrated or attached to another machine and will be operated together with that machine.
Lubricus Lubrication System may only be used according to the technical data (see chapter "technical data").
Unauthorized **structural changes** at the Lubricus Lubrication System are **not permitted**. We do not assume liability for damages of persons or machines which result from that.

Attention

Other uses or uses beyond those described above cannot be considered to be in accordance with the regulations.

Extent of warranty

Warranties concerning operating safety, reliability and capacity, are only granted under the following conditions:
Assembly, installation, maintenance and repair are only carried out through trained specialist. Hazardous hot or cold machine parts must be shielded to prevent touching.
Lubricus Lubrication System must be used according to the instructions in the technical operating manual
- the rated technical data must not be exceeded in any case.
- Retrofitting and repair work on the Lubricus Lubrication System may only be done by manufacturer.

General safety information

Basic information, which must be followed during service, operation and maintenance, are listed as follows.
It is absolutely essential to read the operator's manual / user guide by respective technical staff / technical operator before installation and start up.
In addition to this, it must be permanently available at the site.

IMPORTANT

Please pay attention, not only to the safety instructions under this main point, but also to those special security cautions that are mentioned on the other pages.

This symbol warns of electrical voltage.

Safety instructions which, if not complied with, may endanger persons, are marked specifically with the general hazard symbol.

Attention

This heading is used if inaccurate compliance or non-compliance with the operating Instructions or specified work procedures etc. may result in damage.

Remark

Points out special information.

Notes attached directly on the machine, must be strictly followed and maintained in completely readable condition!

Qualification and training of the personnel

The operation, maintenance, service and installation personnel must have appropriate qualifications for this work. Responsibility and supervision of the personnel must be clearly defined by the end user / operator. If the personnel do not have the necessary knowledge, they must be trained and instructed. The operator must ensure that the personnel have completely understood the contents of the user information.

Non-observance of the safety information can be dangerous

Not observing the safety information can lead to danger for people, environment and machines.
Not observing the safety information can mean the loss of any or all damage claims. In special cases, non-observance can, for example, lead to the following dangers:

- Failure of important plant functions.
- Failure of prescribed methods of maintenance and preventive maintenance.
- Endangering people due to electrical, mechanical and chemical effects.
- Endangering the environment due to leaks of dangerous materials.

Safety information for operators/operating staff

- Hot or cold machine parts are hazardous and must be protected from touching. The protection on "moving or rotating parts" must not be removed.
- In case of leakages of dangerous media proper disposal not endangering environment and people must be ensured.
- Legal Regulation must be observed and complied.
  Eliminate any danger due to electrical power.

Safety information for maintenance, inspection and assembly work

All **maintenance, inspection and installation work** may only be carried out **by trained specialists** who have been informed appropriately by studying the user information closely.
All work must only be carried out when **machine is shut down** and while wearing appropriate **protective clothing**. Always comply with the procedures for shutting the machine down that are described in the operating manual. All the safety and protective equipment must be replaced immediately after completing work. Environmentally hazardous substances that endanger the environment must be disposed in accordance with local regulations. Secure the system during maintenance and repair work, against intentional or unintentional operation. Dispose of used lubricants in accordance with the safety data sheets of the lubricant manufacturer.

Alterations and manufacture of spare parts without authority

Rebuilding or altering the Lubricus Lubrication System is only allowed after consultation with the manufacturer. **Original spare parts** and accessories authorized by the manufacturer are for **safety** purposes. Using other parts results in loss of liability for claims resulting out of this. For components, retrofitted by the operator, the manufacturer does not assume guarantee nor claims for damages.

Prohibited methods of operation

Operational security of the Lubricus Lubrication System is only guaranteed if it **is operated in accordance with the operating instructions**. The limit values stated in the technical data must not be exceeded under any circumstances.

General risk reference

All components of the system are designed in accordance with the prevailing regulations of the construction of technical machines, in regards to operational safety and accident prevention. Operation outside of these constraints can lead to dangers for the user respectively third persons or other technical facilities. The Lubricus Lubrication System therefore may fulfil only in **technically fault-free condition** its intended use. This may only be carried out under compliance of the safety regulations and the attention of the operator's manual.
Therefore please **regularly inspect** the pump and its attachments for possible **damage** or **leaks**.

Transport and storage

Use suitable lifting gear for transport.
Do not throw or expose the Lubricus Lubrication System to strong shock loads.
Store the Lubricus Lubrication System in a cool and dry place to avoid corrosion of the system's individual parts.

Pay attention to the current safety- and accident prevention instructions during the transport. Wear suitable protection equipment if necessary!

Installation instruction

The following conditions have to be satisfied during the installation of this Lubricus Lubrication System, thus it can be assembled, with other parts, to a complete machine without affecting the safety and health of humans.

The housing of the Lubricus and/or Lubricus Controller should not be exposed to direct sunlight and/or radiant heat preventing the formation of condensation.

Electrical connection

- Have the electric power supply connected only by a trained electrician!
- Connection and wiring of the electric components should be done by an expert trained in this field.
- Check the voltage details with the existing power supply voltage!

Maintenance /repair

Disconnect the voltage feed, before starting with **maintenance or repair.**
Maintenance and repair work may only be done with the system shut down.
Check the surface temperature of Lubricus Lubrication System, due to danger of burning by radiant heat. Always wear heat-resistance gloves! Protect the system from activation during maintenance and repair work!

Function/Principle

When activating the Lubricus Lubrication System the piston pump starts to work and pumps the lubricant in small quantities to the outlets. The integrated microprocessor controls the delivery rates and the operating time, which can be individually set.

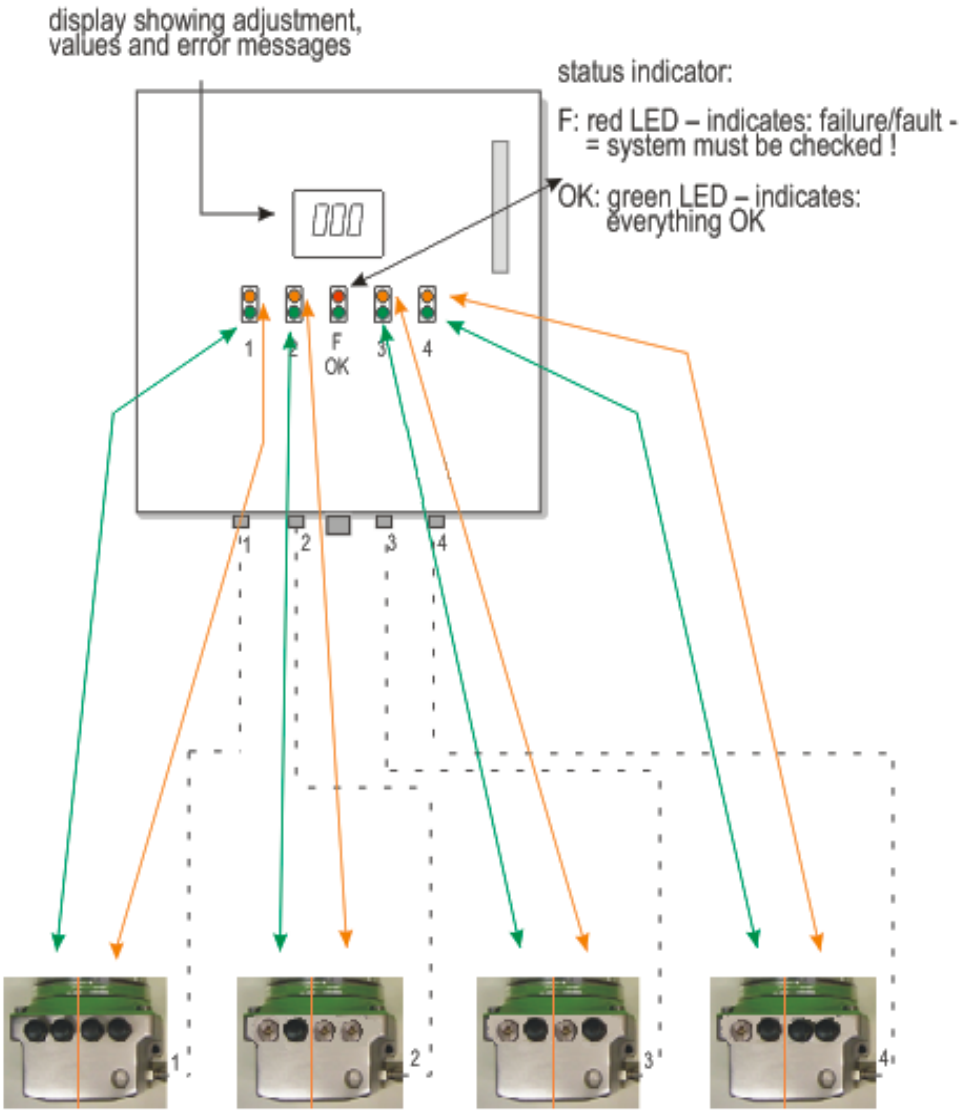
Lubricus Controller Installation:

- Observe the safety instructions
- Lubricus will be installed near the lubrication point
- Install Lubricus Controller in a central location
- Connect cable
- Switch on

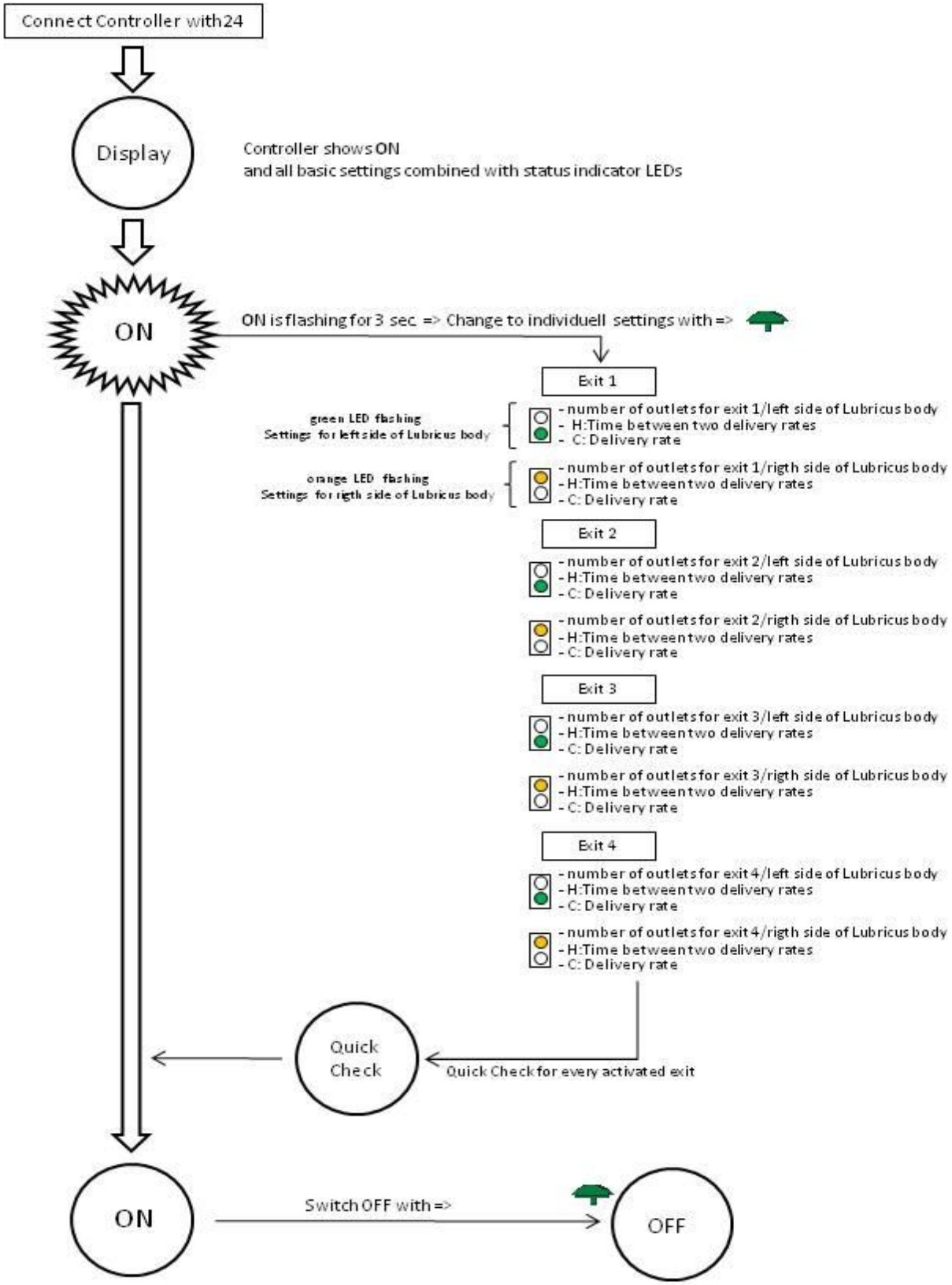
=> Finished

Lubricus Controller settings:

- The programming mode enables:
=> Entering the quantity of exits per Lubricus (page 12 and page 13-14, specific settings)
=> Entering pause time (=Time between 2 lubrication intervals, page 12: table pause time adjustment)
=> Entering the lubrication quantity per interval (page 12, table quantity adjustment)



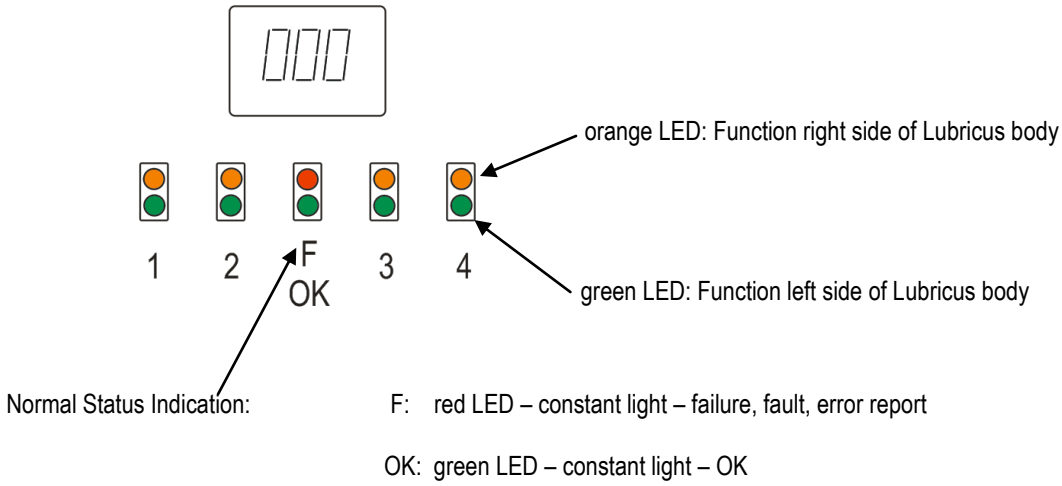
Adjustment Flow chart


Connect Controller with24
Display
Controller shows ON
and all basic settings combined with status indicator LEDs
ON
ON is flashing for 3 sec => Change to individuell settings with =>
Exit 1
green LED flashing
Settings for left side of Lubricus body
- number of outlets for exit 1/left side of Lubricus body
- H:Time between two delivery rates
- C: Delivery rate
orange LED flashing
Settings for rigth side of Lubricus body
- number of outlets for exit 1/rigth side of Lubricus body
- H:Time between two delivery rates
- C: Delivery rate
Exit 2
- number of outlets for exit 2/left side of Lubricus body
- H:Time between two delivery rates
- C: Delivery rate
- number of outlets for exit 2/rigth side of Lubricus body
- H:Time between two delivery rates
- C: Delivery rate
Exit 3
- number of outlets for exit 3/left side of Lubricus body
- H:Time between two delivery rates
- C: Delivery rate
- number of outlets for exit 3/rigth side of Lubricus body
- H:Time between two delivery rates
- C: Delivery rate
Exit 4
- number of outlets for exit 4/left side of Lubricus body
- H:Time between two delivery rates
- C: Delivery rate
- number of outlets for exit 4/rigth side of Lubricus body
- H:Time between two delivery rates
- C: Delivery rate
Quick Check
Quick Check for every activated exit
ON
Switch OFF with =>
OFF

Flow chart details – overview adjustment

Lubricus Controller can be adjusted without any Lubricus unit attached. Settings will stay in memory. The Controller controls the Lubricus units in sequence starting at exit 1.

.



1) **For every Lubricus connected the number of outlets must be programmed.**

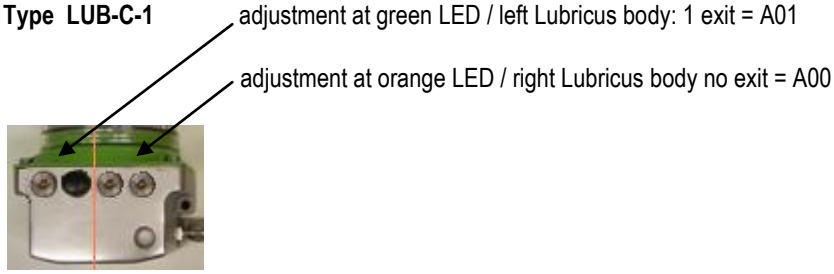
Divided into left half (green LED) and to right (orange LED) half of the Lubricus body.

The display shows following: Base setting: A00 = no exit activated

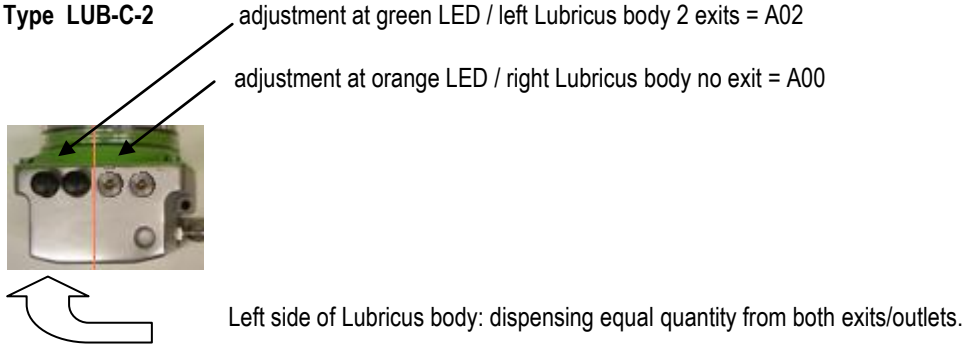
A01 = 1 exit activated
A02 = 2 exits activated

<u>Settings for every specific Lubricus Models</u>

Type LUB-C-1



Type LUB-C-2


adjustment at green LED / left Lubricus body 2 exits = A02
adjustment at orange LED / right Lubricus body no exit = A00
Left side of Lubricus body: dispensing equal quantity from both exits/outlets.

Typ LUB-C-3

adjustment at green LED / left Lubricus body 1 exit = A01

adjustment at orange LED / right Lubricus body: 2 exits = A02

Left exit individual controlled

Right side of Lubricus body (2 outlets) is dispensing equal quantity.

OR

Typ LUB-C-3

adjustment at green LED / left Lubricus body: 2 exits = A02

adjustment at orange LED / right Lubricus body: 1 exit = A01

Right exit individual controlled.

Left side of Lubricus body (2 outlets) is dispensing equal quantity.

Typ LUB-C-4

adjustment at green LED / left Lubricus body: 2 exits = A02

adjustment at orange LED / right Lubricus body: 2 exits = A02

Left and right side of Lubricus body is individual controlled.

Mix of 2x different dispensing quantities.

Right side of Lubricus body (2 outlets) is dispensing equal quantity.

Left side of Lubricus body (2 outlets) is dispensing equal quantity .

Typ LUB-C-1-1

adjustment at green LED / left Lubricus body 1 exit = A01

adjustment at orange LED / right Lubricus body: 1 exit = A01

Left and right side of Lubricus body is individual controlled.

2) If exits are activated (A01 or A02), each side of Lubricus body half can be adjusted:

H = Pause Time => Time interval between 2 lubrication intervals (1 to 96 h possible)

than

C = Lubrication quantity per interval => (**1** x 0,15 cm³ to **30** x 0,15 cm³ = 4,5 cm³ possible)

H = Pause Time

H: Adjustment for Lubricus – 1 side of body	**H (Pause Time) adjustment = Time between 2 lubrication intervals (1 to 96 h possible)**				
H: Pause Time (hours)	**1**	**12**	**24**	**48**	**96**
Result: Lubrication cycles per exit per month	720	60	30	15	7,5

Intermediate steps are possible.

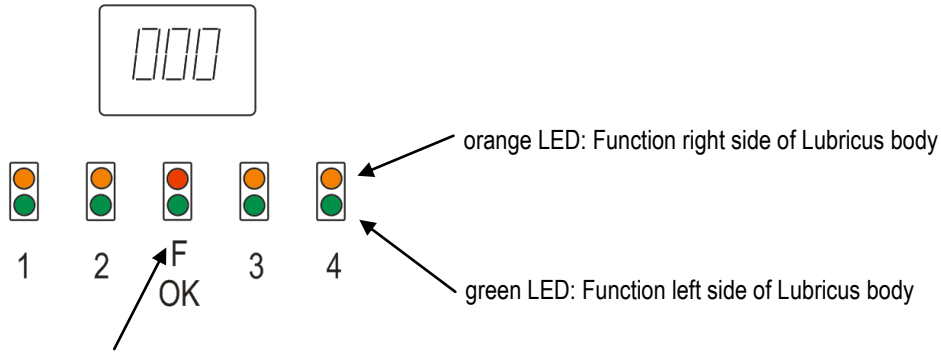
C = Lubrication quantity per interval

C: Adjustment for Lubricus – 1 side of body	**C (number of strokes) adjustment = delivery rate of one period**				
Number of strokes	**1**	**5**	**10**	**20**	**30**
Delivery rate of one period	**0,15cm³**	**0,75cm³**	**1,5cm³**	**3,0cm³**	**4,5cm³**

Intermediate steps are possible.

Start up (Switch on / Switch off / Change)

Lubricus Controller can be adjusted without any Lubricus unit attached. Settings will stay in memory. Lubricus Controller controls the connected Lubricus in sequence one after the other. This ensures no Lubricus unit is operating parallel preventing higher energy usage. During pump operation no further changes and functions are possible.

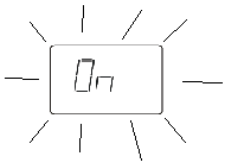


(1) Connect Lubricus Controller with M12x1 Plug to 24 VDC (e.g. via PLC), power consumption max. 300 mA (more details in communication interface, page 18) after connection 24 VDC -> green LED illuminated (constant light)

(2) Lubricus Controller displays ON, the display will show all values in the display associated with the assigned LED light. Lubricus unit 1: green LED, than orange LED; Lubricus unit 2: green LED, than orange LED; Lubricus unit 3 green LED, than orange LED ; Lubricus unit 4: green LED, than orange LED.

Basic settings: **all Controller- exits are not activated.**

(3) After displaying all adjustments, ON is blinking for approx. 3 sec in the display : **Now** you can adjust the basic settings.



If no further action the Controller will continue in the operating mode. Place activation and programming key in ventilation hole and turn it from OPEN -> CLOSE

Open the ventilation lock (turn clockwise to OPEN) and remove the cover. The nose of the cover is your Operating / programming key.

All adjustments and changes will be executed by touching the sensor area on the Controller with the activation and programming key.

(4) Basic adjustment will be changed when display blinks “ON”: touch the sensor area with the activation and programming key, approx. 2-3 sec and hold until the display “On” disappears (red LED), then remove programming key:

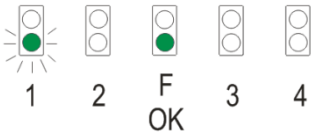
Should you have missed the time when „On“ was blinking, place programming key on sensor and hold until you see a 3 x red blinking signal (red LED) OFF in display. To switch Unit ON **place** programming key on sensor and hold until you see a 3 x red blink signal (red LED) ON in display.

Programming for each Controller exit:

The programming mode enables:

1. **Entering the quantity of exits per Lubricus unit, page 10-11, specific settings (if no exit is activated = A00 -> 2. and 3. are not available!)**
2. **Entering H: Pause Time (= Time between 2 lubrication intervals, page 12: table pause time adjustment)**
3. **Entering C: the lubrication quantity per interval, (page 12, table quantity adjustment)**

a) Lubricus Controller Exit 1, green LED is blinking (-> left side of Lubricus body)



- Display shows A00: Enter required pump exits as per your attached Lubricus Model, page 10-11

Example: Lubricus LUB-C-2: Adjustment at green LED / left side of Lubricus body: 2 Exits= A02

Touch sensor shortly with programming key until required information is displayed. If there is no change the displayed value will be used.

- After the exit activation the parameters H and C need to be adjusted:

H: Pause time between 2 lubrication cycles, Input options: 1 to 96 (Values in h, Table page 12)

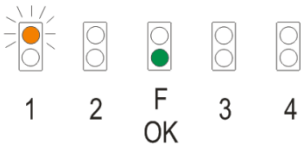
Short touch of the programming key on the sensor changes the value (1-96 are possible); Constant contact will let the display fast forward; short contact will advance values by 1. No activity for 2 sec through touching the sensor pad the displayed value will then be used and placed in memory. After a short time the unit will switch automatically to C.

C: Number of cycles (Number of cycle’s x 0,15cm³ = lubrication quantity): Input options: 1 to 30 (table page 12).

Short touch of the programming key on the sensor changes the value (1-30 are possible); Constant contact will let the display fast forward; short contact will advance values by 1, no activity for 2 sec by touching the sensor pad the displayed value will then be placed in memory and will be used. This will finish the basic settings of Lubricus Controller Exit 1, left Lubricus body side, green LED.

- Automatic change to next Lubricus body half, on the same Lubricus Controller Exit

b) Lubricus Controller Exit 1, orange LED is blinking (-> right side of Lubricus body)



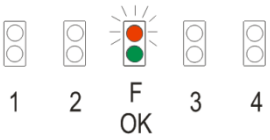
Same procedure like a) …

- Automatic change to next Lubricus Controller exit 2, 3 and 4 see Adjustment Flow chart, page 9

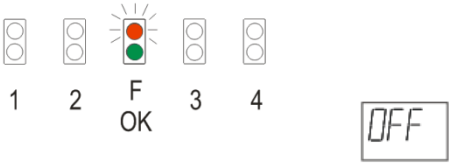
c) If no further action the unit will continue in the operating mode. Place activation and programming key in ventilation hole and turn it from OPEN -> CLOSE

d) Lubricus Controller will initiate all activated exits. The display will change to "ON". An extra lubrication cycle of 0.15 cc per exit with back pressure measurement (Quick check) will be performed. A value that represents the pressure required to pump the lubricant to the lubrication point will be displayed. After the pump cycle is finished the max pressure is shown in bar, e.g. 015 represents 15 bar. The unit can only provide approximate values from + / - 15 %. This is accurate enough to establish the condition of the lubrication point.

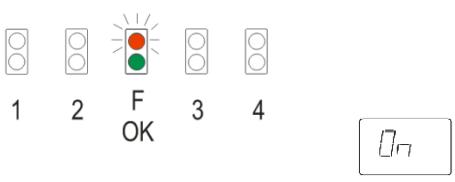
(5) **Additional functions: <u>QuickCheck = extra dispensing cycle</u>** (= pumping of small amounts of lubricant for testing purposes): **Touch** contact sensor of Lubricus Controller with programming key and count **<u>2 x red blinking signal</u>** (central LED in the display)



(6) Additional functions: <u>Switch „OFF"</u>:
Touch contact sensor of Lubricus Controller with programming key and count **<u>3 x red blinking signal</u>** (central LED in the display) and remove programming key. Display changes to "OFF". Adjustment stays in Memory. A longer contact of the programming key with the sensor <u>does not</u> switch the unit off preventing accidental stopping when a strong magnet is near the of Lubricus Controller.



(7) **Additional functions: <u>Switch „ON"</u>:** To switch the unit "ON" **Touch** contact sensor of Lubricus Controller with programming key and count **<u>3 x red blinking signal</u>** (central LED in the display) and remove programming key. Display changes to "ON". Adjustment stays in Memory



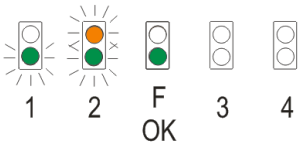
Malfunction (error shown on LCD / LED)

"Normal" operating mode: Lubricus Controller display „ON" each LED for activated pumps blink shortly one after each other in 1 second intervals. Not activated Lubricus Controller exits will not blink

Example:

Lubricus Controller exit 1: Lubricus LUB-C-2:	Adjustment green LED / left Lubricus body:	2 exits = A02
	Adjustment orange LED / right Lubricus body:	0 exits = A00
Lubricus Controller exit 2: Lubricus LUB-C1-1:	Adjustment green LED / left Lubricus body:	1 exit = A01
	Adjustment orange LED / right Lubricus body:	1 exit = A01

Green LED for normal operating mode is always illuminated, LED's of Lubricus Controller exit 1 and 2 blink shortly one after each (green, green ,orange , and starting again from the beginning …)



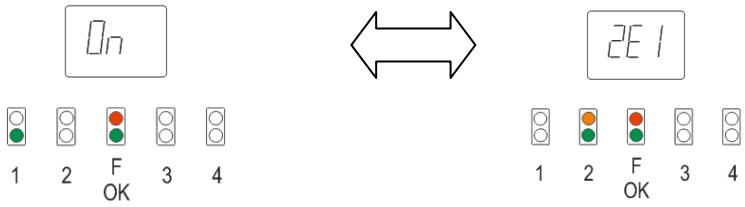
Error messages / faults: The dedicated error message for each connected Lubricus unit is displayed.

E1: **Empty lubricant reservoir**: red LED lights constantly + Display will show error for Lubricus unit connected to Lubricus Controller exit + E1, when the sequence of the connected pump with the error is reached. If the sequence reaches the units without error the display will show "ON", the red LED will still light to signal that an error message exists.

Root cause: The lubricant cartridge is empty. The unit continues to be active and will pump!

Corrective action: replace cartridge. Lubricus will continue to run as per active program.

Example: exit 1, Lubricus LUB-C-2, all OK exit 2, Lubricus LUB-C-1-1, cartridge empty



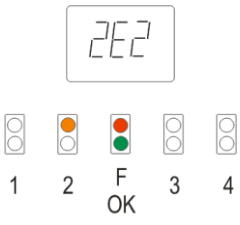
E2: **Back pressure too high:** red LED lights constantly + Display will show error for Lubricus unit connected to Lubricus Controller exit + E2; the error message is related to the Lubricus body half respectively to the Lubricus exit.

Root cause: Back pressure was measured 3 x too high. The lubrication point could be clocked, the tube length could be too long or the grease is too stiff or has hardened. Lubricus will stop!

Corrective action: Trace reason for high back pressure >70bar and correct it.

Switch unit „OFF" and „On" again. The error message will be reset to 0. Lubricus will start again as per program in memory.

Example: Exit 2, Lubricus LUB-C-1-1, Error 2E2 at exit 2 + orange LED / right Lubricus body half: exit1

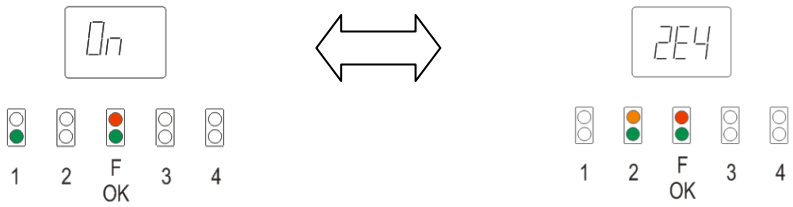


E4: **Lubricus-feedback**: Exit was activated, but no feedback from connected Lubricus unit: red LED lights constantly + Display will show error for unit connected to Lubricus Controller exit + E4; the red LED will light additionally to the green and orange LED when the sequence of the connected unit with the error is reached. If the sequence reaches the Lubricus units without error the display will show “ON”, the red LED will still light to signal that an error message exists.

Root cause: The connection cable between Controller and Lubricus unit is broken, disconnected or missing. Lubricus Controller unit stays active and other connected units will dispense as per program in memory.

Corrective action: Change or connect cable (broken, missing or disconnected connection cable), Switch unit „OFF“ and „On“ again. The error message will be reset to 0. Lubricus will start again as per program in memory

Example: Exit 1, Lubricus LUB-C-2, all OK Exit 2, Lubricus LUB-C-1-1, cable defect

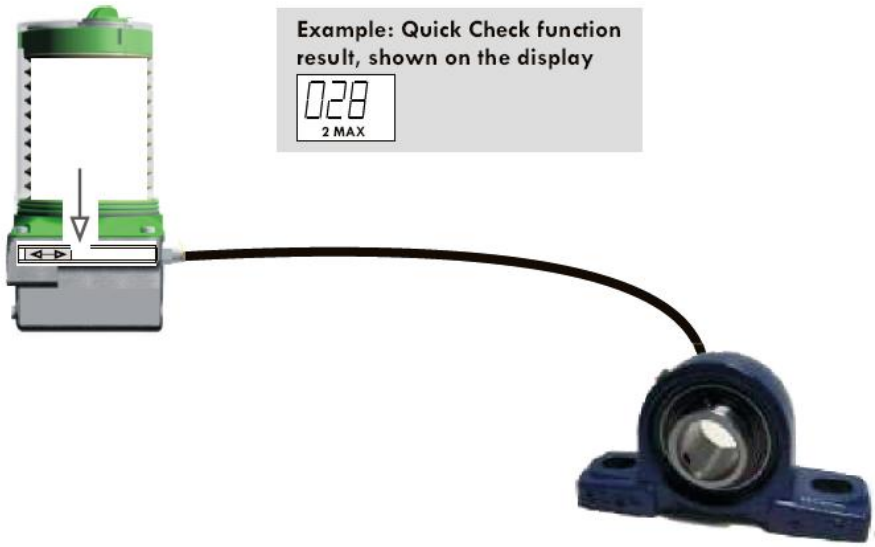


System error: Switch unit „OFF“ and „On“ again, Memory will not be erased.

Extras:

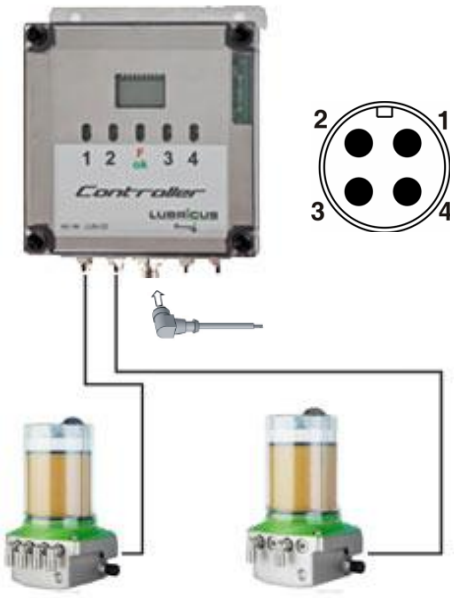
”Quick check” back pressure measurement

For testing purposes the Lubricus Controller is equipped with the “Quick Check” back pressure measuring function. **Quick Check back pressure measurement uses the extra lubrication cycle.** A simple touching of the programming key to the sensor pad will measure the existing pressure between the lubrication point and the pump unit exit. The value in bar will be shown in the display.



Connector PIN assignment, connection Lubricus Controller to Lubricus Lubrication System, Type C

The Lubricus Controller is equipped with a 4- pol M12x1 connector to connect to the controller of your machine for example a PLC. This connector supplies power to the Lubricus units and communicates with the controller. The voltage to operate and to switch unit “ON” and “OFF” is +20...+30 VDC (PIN 1). The Controller will be in operating mode when voltage is present. The green LED is illuminated. The supply voltage will be switched to exit (PIN4) if there are no errors (Unit OK). The Controller will save the current operating parameters in memory if the supply voltage is disconnected or unit is switched “OFF”. The unit will start again using the last parameters saved in memory. The operating status will be communicated via PIN 4 and will be displayed in the integrated display of the Lubricus Controller.



Connector PIN assignment Lubricus Controller M 12 x 1

PIN 1: input voltage +20...30 VDC, color brown

PIN 2: no assignment, color white

PIN 3: Ground (GND), color blue

PIN 4: Output Signal, color black

Details:

PIN 1: Peak current (24 VDC): Imax, approx. 350 mA (during pump operation), typically < 200 mA, Standby current (standby mode) < 20 mA

Input Signal can switches ON and OFF

PIN 2: no assignment

PIN 3: Ground (GND)

PIN 4: High = operating mode (=OK) = input voltage, Low = 0 V = error (type of error shown in display of Lubricus Controller), the outlet signal, PIN4, can be charged with maximal 300mA. Warning: the exit is not short-circuit proof

Connection Lubricus Controller - Exit M8x1, 4–pol - to Lubricus, Typ C – Exit

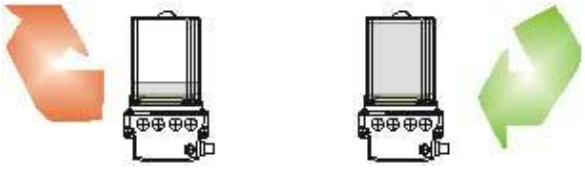
a) M12x1, 4-pol. All special cables are available on stock in our catalogue

b) If customer is managing all the necessary cabling, required to keep the system functional:

Lubricus Controller M8: PIN 1 to Lubricus unit, Typ C, M12: PIN 1
Lubricus Controller M8: PIN 2 to Lubricus unit, Typ C, M12: PIN 2
Lubricus Controller M8: PIN 3 to Lubricus unit, Typ C, M12: PIN 3
Lubricus Controller M8: PIN 4 to Lubricus unit, Typ C, M12: PIN 4

Service: replacement of cartridge: Lubricus , Type C, modell with cartridge

(error report: E1, empty cartridge)



1. Observe the safety instructions. Switch off Lubricus Controller

2. Take out ventilation locking (turn clock wise to OPEN)

3. Press the housing, turn left and remove it

4. Remove the empty cartridge.

5. Remove protection from the new cartridge

6. Lubricate O-Ring of the new cartridge slightly.

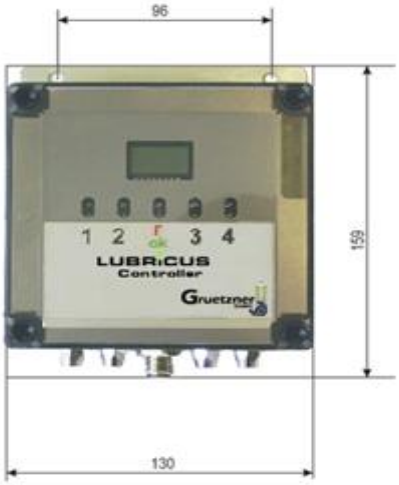
7. Place the cartridge on the inlet

8. Place the pump upright on flat surface. Reinstall the housing by gently pressing while turning clockwise until hand tight.

9. Install the ventilation lock and close it (turn counter clockwise to CLOSE)

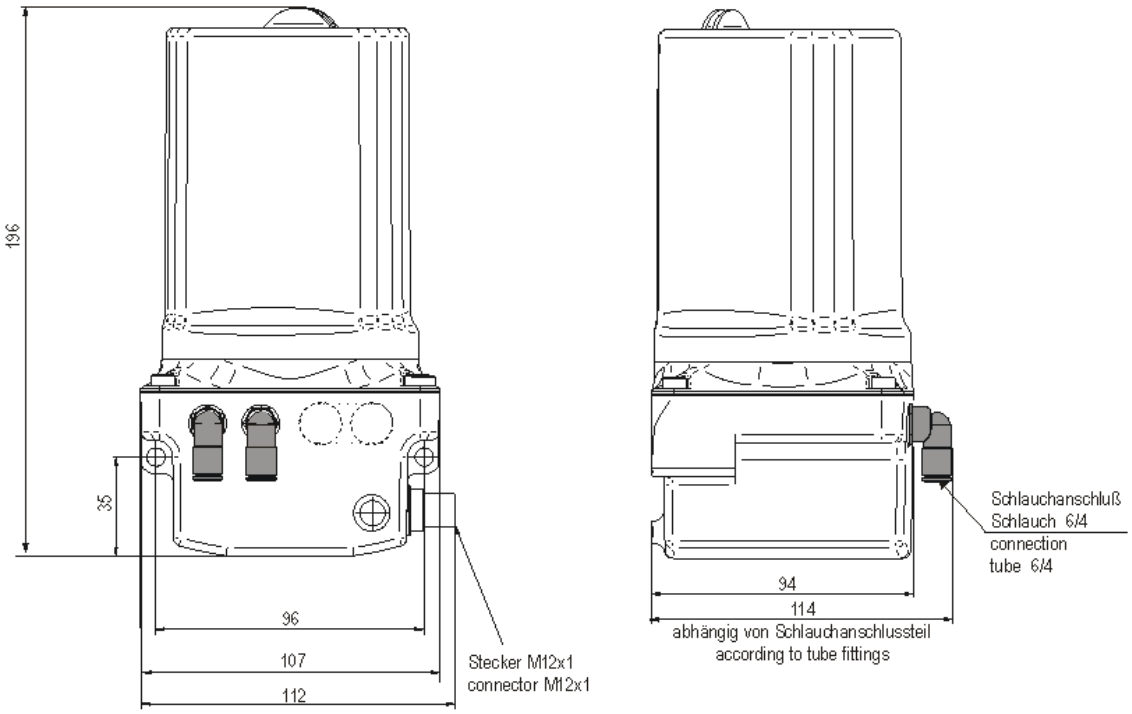
10. Pump will work again according to settings, error report will be deleted

Technical Data Lubricus Controller



Control:	micro processor controlled, up to 4 Lubricus units Type C can be connected
Power supply:	24 VDC
Power consumption:	max 300mA, typical <200mA
Temperature range:	-20°C to +80°C
Dimensions, max.	
Width x height x depth:	130 x159x35 mm
Connector:	M12x1, 4-pole, power supply and connection to a PLC possible Lubricus connection to Controller M8 x 1
Protection class:	IP 55
Mounting:	mounting wholes, Ø 6,6mm

Technical Data Lubricus, Type C



Storage/volume:	cartridge 400cm³
Lubricant:	oil or grease up to NLGI 3
Function / principle:	piston pump
Delivery rate per interval:	0,15 cm³
Number of outlets:	up to 4
Connection:	high pressure tube 6 x 4 (flexible tube with outer diameter Ø 6mm outside and Ø 4mm inside diameter)
Operating pressure	max. 70 bar
Operating temperature:	-20°C to +80°C
Dimensions, max., Width x height x depth:	112 x 196 x 94 mm
Weight, without lubricant:	1120g
Control:	Lubricus Controller
Level monitoring:	integrated, reedcontact
Connector:	M12 x 1, 4-pole for connection with Lubricus Controller
Protection class:	IP 65

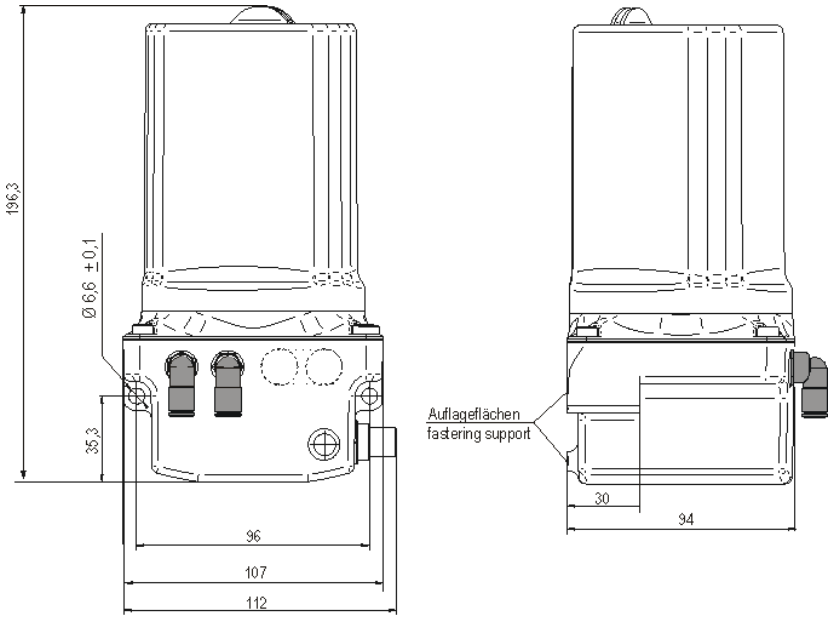
Combination with progressive systems: possible

Mounting Lubricus Controller

Mounting requires 2 screws for example M6. (not included).

Mounting Lubricus unit

2 srews Ø 6mm, for example M6x40 are required for a safe installation of your Lubricus. The optimum clamping force of the screw is 5 Nm. 3 points at the back assure a safe hold.



Recommened tube length

Keep in mind: - For low temperature

- For stiff grease, more than NLGI 2

- For difficult applications with high backpressure

➔ Shorten your tube as much as possible
➔ Minimum inner diameter is 4mm Ø
➔ Avoid reductions of the inner tube

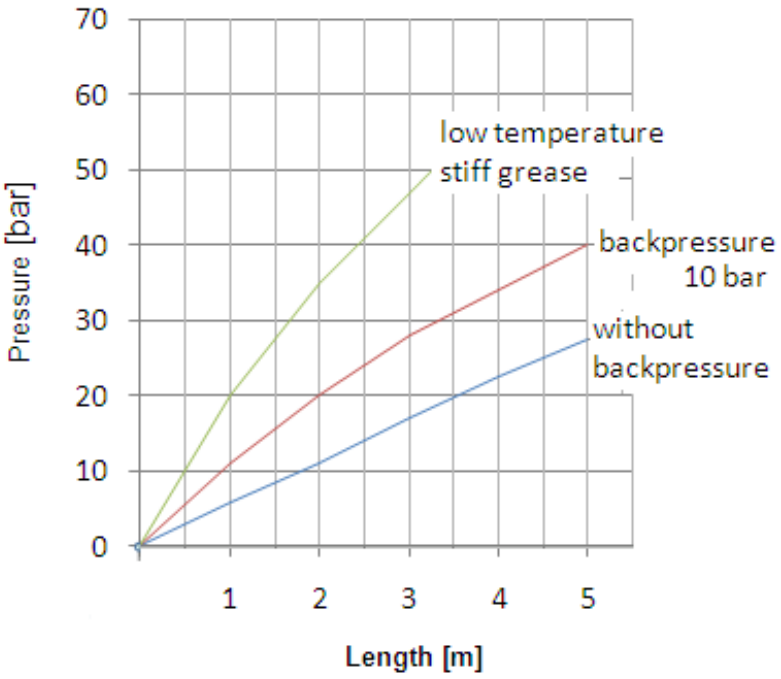


Chart: Required pressure vs. to tube length (tested with tubes 6 x 4 mm)

Disposal

Remark!

When disposing lubricant the waste disposal instructions of the lubricant manufacturer must be observed!
Disposal of Lubricus Lubrication System: observe the regional valid laws and regulations.

The empty lubricant cartridges contain lubricant remains!
Please dispose with other oil contaminated garbage!

Gruetzner GmbH
Kohlenhofstr. 60
D-90443 Nürnberg
www.lubricus.com
Tel.: +49-911-277 399 0
Fax: +49-911-277 399 99